IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORKA

COLBY GOROG, JOSHUA FLINT, LOUIS ROBINSON, and MICHAEL LERRO, *individually and on behalf of all others similarly situated,* 　　　　　　　　Plaintiffs, 　　　v. ELON MUSK and TESLA, INC., 　　　　　　　　Defendants.	Civil Action No.: 1:22-cv-05037-AKH

DRAFT PRELIMINARY EXPERT REPORT OF STAN V. SMITH, PH.D.

March 29, 2024

I.　　ASSIGNMENT

I have been retained by counsel for the plaintiffs to determine the following:

    a) Whether there exists proof common to all proposed class members that all members of the proposed class who were impacted by the alleged wrongful actions of Defendants Elon Musk and Tesla, Inc. suffered and incurred financial losses (realized or unrealized) from their holdings of Dogecoin during the class damages period.

    b) Preliminary estimates of the potential number of class members and the total financial losses suffered by class members throughout the class damages period.

    c) Potential damages methodologies/approaches to use in a future, more detailed damages analysis.

I understand that the class is defined as individuals and entities that hold at a loss or have lost money trading Dogecoin purchased between January 29, 2021 until April 10, 2023 (the period of Defendant Musk's alleged market manipulation), excluding "Defendants, any firm, trust, corporation, or other entity in which any Defendant is an agent, beneficiary, officer, director, shareholder, or trustee, and the agents, representatives, officers, directors, subsidiaries, heirs, successors-in-interest, and assigns of any excluded party."[1]

II.   QUALIFICATIONS

I am President of Smith Economics Group, Ltd., headquartered in Chicago, IL, which provides economic and financial consulting nationwide. I have worked as an economic and financial consultant since 1974, after completing a Research Internship at the Federal Reserve, Board of Governors, in Washington, D.C.

I received my Bachelor's Degree from Cornell University. I received a Master's Degree and my Ph.D. in Economics from the University of Chicago; Gary S. Becker, Nobel Laureate 1992, was my Ph.D. thesis advisor. The University of Chicago is one of the world's preeminent institutions for the study of economics, and the home of renowned research in the law and economics movement.

As President of Smith Economics, I have performed economic analyses in a great variety of engagements, including damages analysis in personal injury and wrongful death cases, business valuation, financial analysis, antitrust, contract losses, a wide range of class action matters, employment discrimination, defamation, and intellectual property valuations including evaluations of reasonable royalty.

I have more than 40 years of experience in the field of economics. I am a member of various economic associations and served for three years as Vice President of the National Association of Forensic Economics (NAFE) which is the principal association in the field. I was also on the Board of Editors of the peerreviewed journal, the Journal of Forensic Economics, for over a decade; I have also published scholarly articles in this journal. The JFE is the leading academic journal in the field of Forensic Economics.

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[1] Fourth Amended Complaint, p. 3-5.

I am the creator and founder of Ibbotson Associates' Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook, Quarterly, Monthly, and SBBI/PC Services. SBBI is generally regarded by academics in the field of finance as the most widely accepted source of statistics on the rates of return on investment securities. SBBI was originally published by Ibbotson Associates, then by Morningstar, Inc., and is now currently published by Duff & Phelps. The original SBBI series generated what became a six-book set universally used for business valuation, and currently available on an online platform. These data series are widely relied upon and regarded as the most accepted and definitive scholarly references by the academic, actuarial and investment community, and in courts of law. All three publishers of the SBBI series acknowledge me as the founder in 1983, for my "invaluable role" as having "originated the idea" of SBBI, which I then implemented while Managing Director at Ibbotson Associates.

I have performed economic analysis in many thousands of cases in almost every state and federal jurisdiction since the early 1980s.

My curriculum vitae is attached, listing all my publications in the last 10 years and beyond. My hourly rate in this case is $615 per hour. The list of all cases in which I have testified in the last 4 years is also attached.

III.   INFORMATION REVIEWED

In order to perform this evaluation, I have reviewed the following materials:

      a. The Class Action Complaint;
      b. The First Amended Class Action Complaint;
      c. Plaintiffs' Third Amended Class Action Complaint;
      d. The Fourth Amended Complaint;
      e. Trading loss information for a set of plaintiffs and class members; and
      f. The Case Information Form.

IV.   BACKGROUND AND DISCUSSION

A. BACKGROUND

Dogecoin is a cryptocurrency, or form of currency that exists digitally or virtually and uses cryptography to secure transactions, with units of Dogecoin stored on a dedicated blockchain containing a chronological records of every Dogecoin transaction since its launch in December 2013.[2] Dogecoin is not backed by any product, service, bank, commodity, insurer, government, or corporation, and does not yield dividends, but when the value of a Dogecoin rises or falls each investor enjoys a gain or sustains a loss proportional to the dollar value of each unit he or she owns.[3] Dogecoin uses an image of a Shiba Inu dog popularized as an internet meme as its logo.[4]

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[2] Ibid., 5, 9.
[3] Ibid., 5, 7.
[4] Ibid., 9.

It is my understanding Defendant Elon Musk ('Musk') began promoting Dogecoin through Twitter in April 2019.[5]

Plaintiffs allege that Musk was aware of the power and influence he had to "pump" Dogecoin's price so he and Defendant Tesla could "dump" their Dogecoin units at a profit.[6] The Fourth Amended Complaint reproduces many of Musk's Tweets during the approximate 800-day class damages period, including many with false or misleading information.

B. SUMMARY OF ACADEMIC RESEARCH ON ELON MUSK'S EFFECT ON DOGECOIN'S PRICE

Musk's influence and control of Dogecoin has been analyzed by academic research. Wen et al. published an article analyzing the manipulation of the Bitcoin, Dogecoin, and Ethereum prices, finding that Dogecoin has the least stable prices of these three cryptocurrencies, and that Dogecoin price increases are unique among these cryptocurrencies in that they are human-controlled rather than caused by other factors, such as government policy and economic factors.[7] They find that Elon Musk has a strong influence on Dogecoin's price, even more than "policy" and "economics."[8] They state that Dogecoin is highly centralized, as the top 100 users own more than 60 percent of Dogecoin, showing that whale users can easily control Dogecoin prices, and making Dogecoin more prone to manipulation than Ethereum and, especially, Bitcoin.[9] They also find that since 2019, every bubble in the price of Dogecoin "has appeared at the same time as Elon Musk's support for Dogecoin on Twitter."[10] They conclude that market manipulation is prevalent on Dogecoin, with "abnormal accounts" able to "predict" future prices, and that Musk's tweets are highly correlated with the price of Dogecoin.[11]

Using an event study approach, Lennart Arte finds that "the very minute Musk posts a Dogecoin-related tweet, the market reacts with an abnormal return of 2.16%, followed by another 2.16% in the next minute" and a cumulative abnormal return of 6.33 percent 60 minutes after Musk's post.[12] Ante states that his findings highlight the "significant instantaneous effect of Musk's tweets on Dogecoin's trading volume that lasts for at least two hours."[13]

Hussain, Anas, and Bouri find that the price explosivity of Dogecoin "depends on the occurrence of Elon Musk's specific tweets about Dogecoin," which "indicates that Elon Musk can move the cryptocurrency markets with his tweets."[14]

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[5] Ibid., 10.
[6] Ibid., 11.
[7] Wen, Li, et al. "Market Manipulation of Cryptocurrencies: Evidence from Social Media and Transaction Data." *ACM Transactions on Internet Technology*. Accepted January 2024: 1-26.
[8] Ibid., 11.
[9] Ibid., 14.
[10] Ibid., 19.
[11] Ibid., 22.
[12] Ante, Lennart. "How Elon Musk's twitter activity moves cryptocurrency markets." *Technological Forecasting and Social Change* 186 (2023): 122112.
[13] Ibid., 10.
[14] Shahzad, Syed Jawad Hussain, Muhammad Anas, and Elie Bouri. "Price explosiveness in cryptocurrencies and

Bouteska et al. find "a strong effect of Twitter investor engagement on Dogecoin returns, whereas it has no significant effect on Ethereum."[15]

La Morgia et al. analyzed Dogecoin pump and dump schemes and identified examples initiated on January 28, 2021 and February 4, 2021 related to Musk's tweets listed in the Fourth Amended Complaint.[16]

Michael Cary finds that "investors/users of cryptocurrencies who are interested in the popularity of the cryptocurrency are influenced by the actions of crypto-tastemakers, but that crypto-tastemakers, once thoroughly affixed to a specific cryptocurrency, may only be able to harm the popularity of the coin," and that "it is entirely possible that when a crypto-tastemaker affixes themselves to a cryptocurrency, that cryptocurrency enters a high risk, low reward state."[17]

The academic consensus is that Dogecoin is unique among major cryptocurrencies as being prone to manipulation, with Elon Musk's promotion of Dogecoin on Twitter being a significant driver of Dogecoin prices and trading volume.

V.   PRELIMINARY DAMAGES OPINION

According to Dogecoin distribution information found at bitinfocharts.com,[18] as of March 16, 2023, near the end of the class damages period, there were 4,580,510 active Dogecoin addresses, with 95.21 percent of all addresses containing 10,000 or fewer Dogecoins. While the average address contained 30,255.69 Dogecoins at this time, the average account with less than 10,000 Dogecoins only contained 492.26 Dogecoins. The *smallest 95 percent of all Dogecoin addresses* held, on average, only 1.6 percent as many Dogecoins as the average of *all Dogecoin addresses*. Meanwhile, the 134 largest Dogecoin addresses held 70 percent of all Dogecoins at this time.

Data from app.intotheblock.com shows that there were 2.8 million Dogecoin addresses with a coin balance when the class damages period began at the end of January 2021.[19] Further, for the weeks beginning February 1, 2021 through the week beginning April 3, 2023, there were 18.808 million new Dogecoin addresses created.[20] Therefore, there are about 21.6 million unique Dogecoin addresses active at some point throughout the class damages period.

Data from app.intotheblock.com also shows the historical number of Dogecoin transactions made each week at a loss compared to the cost basis.[21] The number of losing transactions was

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Elon Musk's tweets." *Finance Research Letters* 47 (2022): 102695.

[15] Bouteska, Ahmed, et al. "Effect of twitter investor engagement on cryptocurrencies during the COVID-19 pandemic." *Research in International Business and Finance* 64 (2023): 101850.

[16] La Morgia, Massimo, et al. "The doge of wall street: Analysis and detection of pump and dump cryptocurrency manipulations." *ACM Transactions on Internet Technology* 23.1 (2023): 1-28.

[17] Cary, Michael. "Down with the# dogefather: Evidence of a cryptocurrency responding in real time to a crypto-tastemaker." *Journal of Theoretical and Applied Electronic Commerce Research* 16.6 (2021): 2230-2240.

[18] https://bitinfocharts.com/top-100-richest-dogecoin-addresses.html

[19] https://app.intotheblock.com/coin/DOGE/deep-dive?group=network&chart=addressStats

[20] Ibid.

very low early in the class damages period, at 2.0 percent or less for the first three weeks, before increasing dramatically.[22] The number of losing transactions for the week beginning May 3, 2021, during which Elon Musk's Saturday Night Live ('SNL') appearance occurred, was only 0.56 percent.[23] The number of losing transactions increased to 4.32 percent, 12.97 percent, and 15.87 percent in the next three weeks, respectively.[24]

Table 1 below shows the estimated percentage of unprofitable Dogecoin transactions by this measure by quarter in the class damages period using data from IntoTheBlock.[25]

Table 1

Estimated Share of Unprofitable Dogecoin Transactions by Quarter and pre and post Musk's SNL Appearance[26]

Q1 2021	5.26%
Q2 2021	10.67%
Q3 2021	26.66%
Q4 2021	32.12%
Q1 2022	43.56%
Q2 2022	41.21%
Q3 2022	45.11%
Q4 2022	40.56%
Q1 2023	39.04%
Pre-SNL	4.36%
Post-SNL	37.03%
Total Damages Period	33.86%

Table 1 shows that the number of losing Dogecoin transactions increased significantly throughout the class damages period, and were more than seven times greater during the weeks of the class damages period after Musk's May 8, 2021 SNL appearance when Dogecoin was at its peak market capitalization.[27] Investors who were influenced by Musk to buy Dogecoin before his SNL appearance were much more likely to suffer losses if they did not sell and get out of their positions before his SNL appearance. Throughout the whole class damages period, 33.86 percent of all Dogecoin transactions were unprofitable.

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[21] https://app.intotheblock.com/coin/DOGE/deep-dive?group=financials&chart=breakEvenPrice
[22] Ibid.
[23] Ibid.
[24] Ibid.
[25] Ibid.
[26] Q1 2023 includes the portion of the class damages period in April 2023.
[27] https://bitinfocharts.com/comparison/dogecoin-marketcap.html

Based on the estimated 21.6 million active Dogecoin addresses during the class damages period, and based on the fact that one-third of all Dogecoin transactions were unprofitable during the class damages period, understanding that there are likely many more Dogecoin addresses that held Dogecoin at a loss during the damages period rather than selling units and realizing the losses, it is my opinion that there are at least 7.2 million prospective class members, or individuals and entities that trade or held Dogecoin at a loss during the class damages period.[28]

An analysis of the trading losses of a sample of 59 plaintiffs and class members during the class damages period shows that their mean loss is $31,450, the median loss is $8,000, showing that major losses skew the average loss upwards when compared to the median loss measured. It is likely that the losses of plaintiffs and early class members are larger than the typical loss of a prospective class member, which might be more in line with the 20th percentile loss suffered by this subset of plaintiffs and class members, which is $1,000.

Based on Dogecoin historical data found at https://finance.yahoo.com/quote/DOGE-USD/history, the total volume of Dogecoin units traded during the class damages period is 1.862 trillion units. The estimated weighted average trading price during this class damages period is $0.262,[29] and the estimated total value of Dogecoin transactions during the class damages period is $487 billion. Based on 21.6 million active Dogecoin addresses during the class damages period, the average transaction value is estimated at $22,500 per distinct address. Assuming one-third of the addresses are tied to class members who suffered losses, if the average rate of return per class member is a benchmark of negative five percent (meaning that the typical class member lost five percent of their stake in Dogecoin), the estimated damages per class member would be $375.

It is my opinion that the average loss per plaintiff and class member is likely in the range from $375 to $1,000, meaning class-wide damages likely range from $2.7 billion to $7.2 billion, with a midpoint of $4.95 billion, based on my preliminary analysis.

The categories of damages recoverable to class members, as discussed above, are widely recognized as recoverable in similar actions and have been approved by courts. These categories of damages are calculated using basic economic damages analysis.

OTHER POTENTIAL DAMAGES APPROACHES

As this case progresses, I may consider additional damages approaches, such as analyzing the average out-of-pocket losses of a broader sample of class members, or estimating what the value of Dogecoin would have been throughout the class damages period but-for the manipulation and alleged wrongful actions of Elon Musk. Additionally, the discovery process may yield pertinent information related to Defendants' Dogecoin trading patterns, which can be used to estimate Defendants' unjust enrichment as a result of their wrongful actions. I reserve the right to update

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[28] Assuming only one Dogecoin address is assigned to each person or entity.

[29] Estimated by adding together the product of each day's average price (estimated as the midpoint between the low and high price) with the proportion of the total class damages period volume accounted for each day.

my opinions through an update, revision, addendum, or supplement of the opinions expressed in this report if additional information is provided to me which alters my opinions.

VI.   CONCLUSION

It is my opinion that I will be able to assess the above-mentioned damages analogous to the class through the implementation of the economic models described above.

The proposed damages methodology that I have described above is tied to plaintiffs' theory of liability.

Individual and summary statistics can be provided to a jury. It may be, for practical purposes, that summary statistics may be used to estimate a particular loss. For example, the average of all the out-of-pocket losses might be considered as a reasonable approach to compensating plaintiffs for such losses. I regard the information and the results that I will arrive at based thereupon as a tool, an aid and a guide to a jury's final deliberations and assessments.

In my opinion, it is reasonable for experts in the field of economics and finance to rely on the methods, materials and information I have reviewed and discussed in this case, for the formulation of my substantive opinions herein.

If you have any questions, please do not hesitate to call me.

Sincerely,

Stan V. Smith, Ph.D.